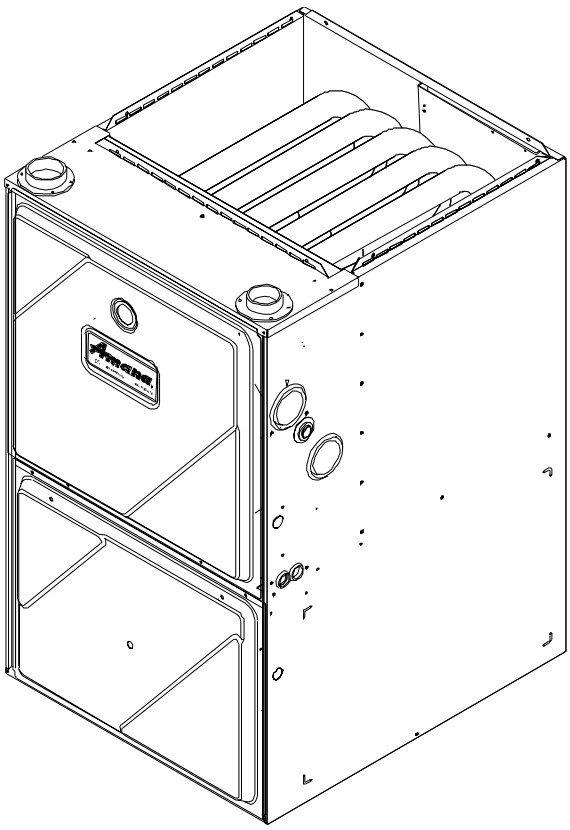
Technical Information

40" 90% Gas Furnaces
GUSA___BX__

- Refer to Service Manual RS6600001 Rev. 2 for installation, operation, and troubleshooting information.
- All safety information must be followed as provided in the Service Manual.
- Refer to the appropriate Parts Catalog for part number information.

Model and Manufacturing numbers listed in this manual.

MODEL	M/N
GUSA070BX35	P1233902F
GUSA090BX40	P1233904F
GUSA090BX50	P1233905F
GUSA115BX50	P1233906F
GUSA070BX35	P1239502F
GUSA090BX40	P1239504F
GUSA090BX50	P1239505F
GUSA115BX50	P1239506F
GUSA070BX35	P1242002F
GUSA090BX40	P1242004F
GUSA090BX50	P1242005F
GUSA115BX50	P1242006F



This manual replaces RT6612003 Rev. 1 October 2001.

REV. 2 - New models added to manual (standardized White-Rodgers Sini Igniter).

Heating & Air Conditioning
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Comfort. Quality. Trust.

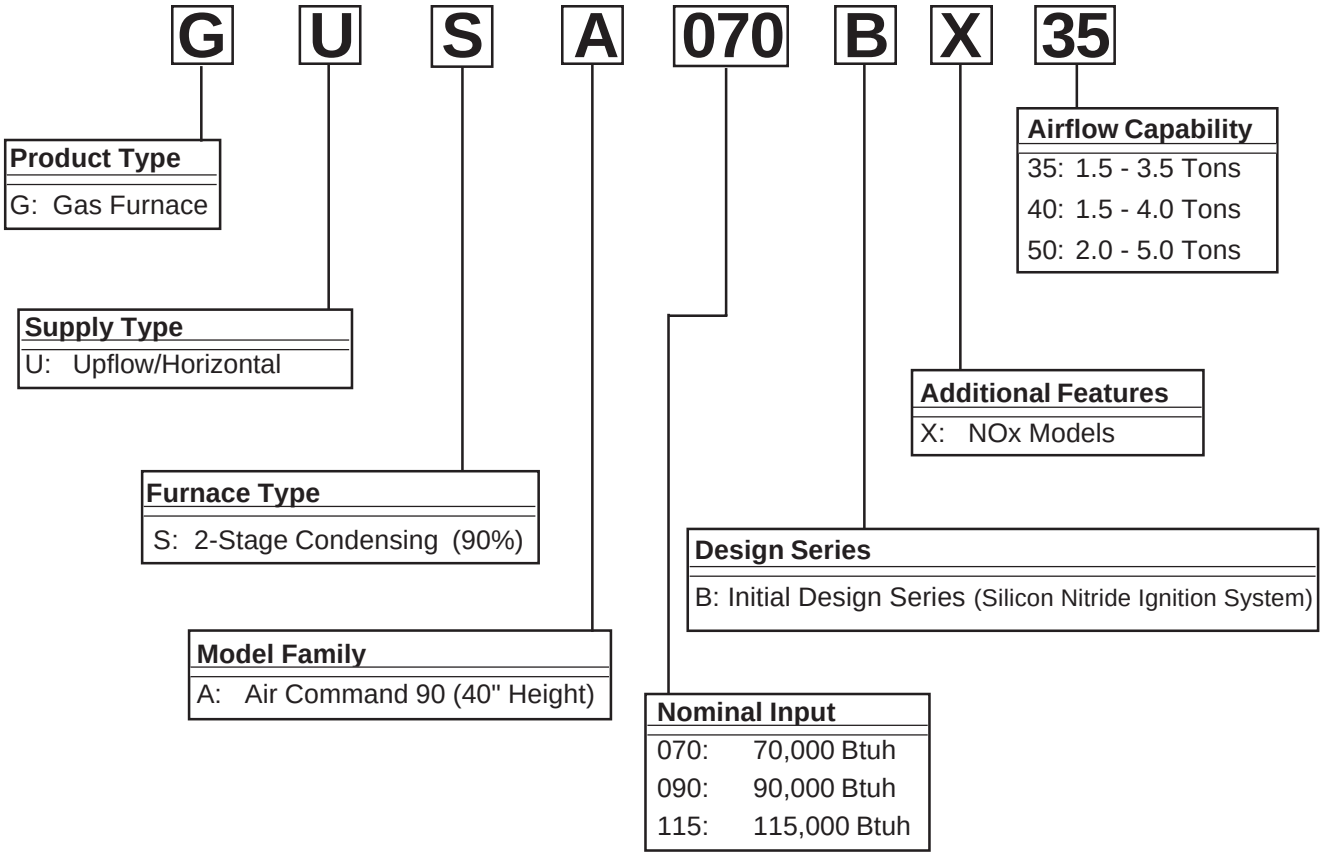
This manual is to be used by qualified HVAC technicians only. Amana does not assume any responsibility for property damage or personal injury due to improper service procedures performed by an unqualified person.

RT6612003
Revision 2
February 2002

PRODUCT IDENTIFICATION

The model and manufacturing number are used for positive identification of component parts used in manufacturing. When engineering and manufacturing changes take place where interchangeability of components are affected, the manufacturing number will change.

It is very important to use the model and manufacturing numbers at all times when requesting service or parts information.

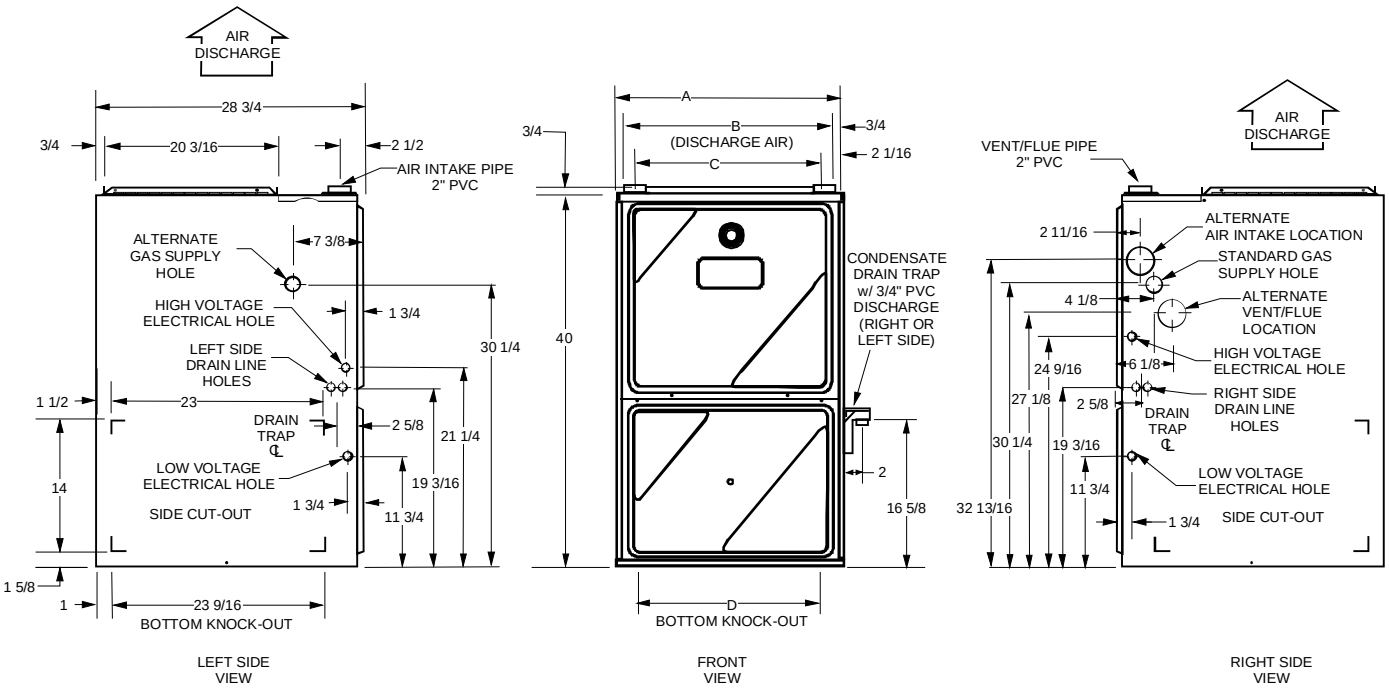


WARNING **IF REPAIRS ARE ATTEMPTED BY UNQUALIFIED PERSONS, DANGEROUS CONDITIONS (SUCH AS EXPOSURE TO ELECTRICAL SHOCK) MAY RESULT. THIS MAY CAUSE SERIOUS INJURY OR DEATH.**

CAUTION **AMANA WILL NOT BE RESPONSIBLE FOR ANY INJURY OR PROPERTY DAMAGE ARISING FROM IMPROPER SERVICE OR SERVICE PROCEDURES. IF YOU PERFORM SERVICE ON YOUR OWN PRODUCT, YOU ASSUME RESPONSIBILITY FOR ANY PERSONAL INJURY OR PROPERTY DAMAGE WHICH MAY RESULT.**

PRODUCT DIMENSIONS

GUSA___BX__

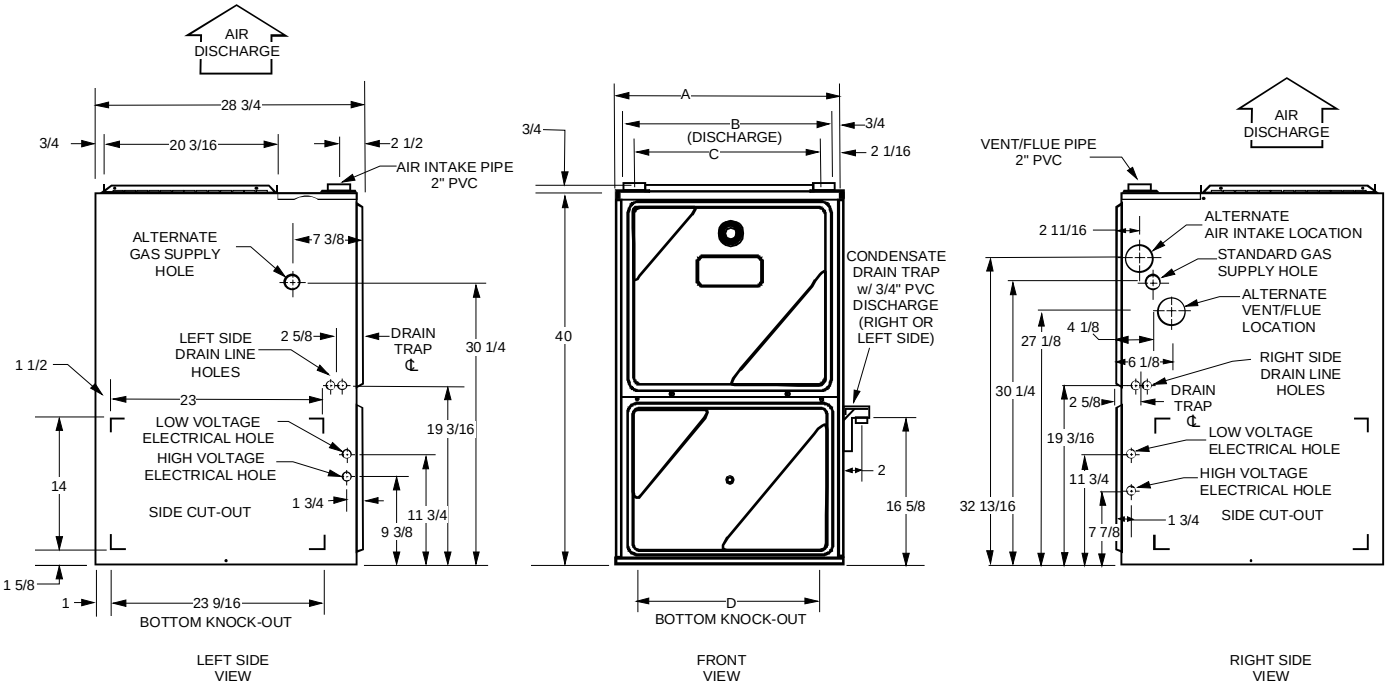


Cabinet Size	Units	A	B	C	D
Small	070__35	16-1/2	15	12-3/8	12-5/8
Medium	090__40	20-1/2	19	16-3/8	14-5/8
Large	090__50 115__50	24-1/2	23	20-3/8	18-5/8

All dimensions are in inches.

PRODUCT DIMENSIONS

GUSA___BX__



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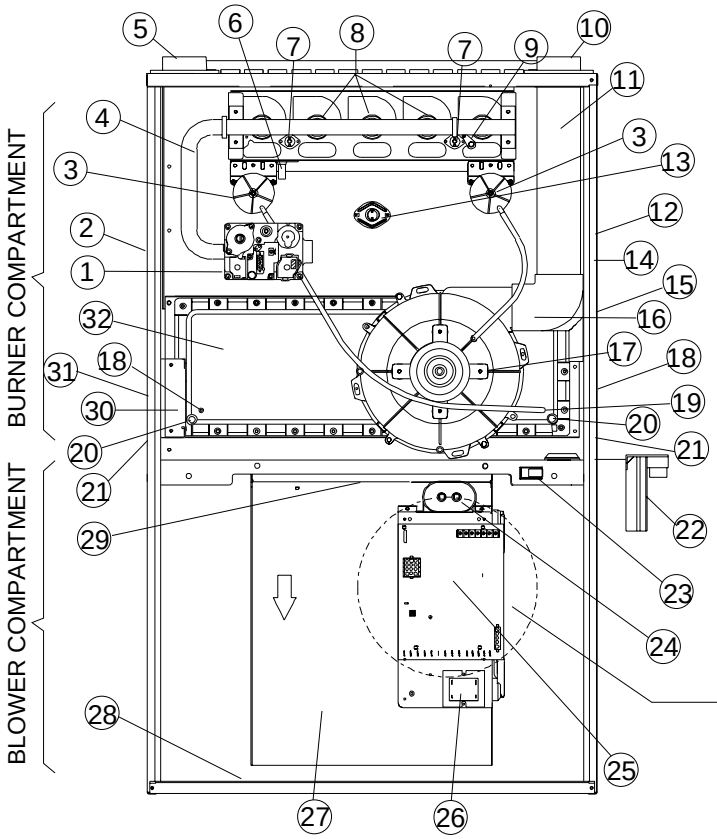
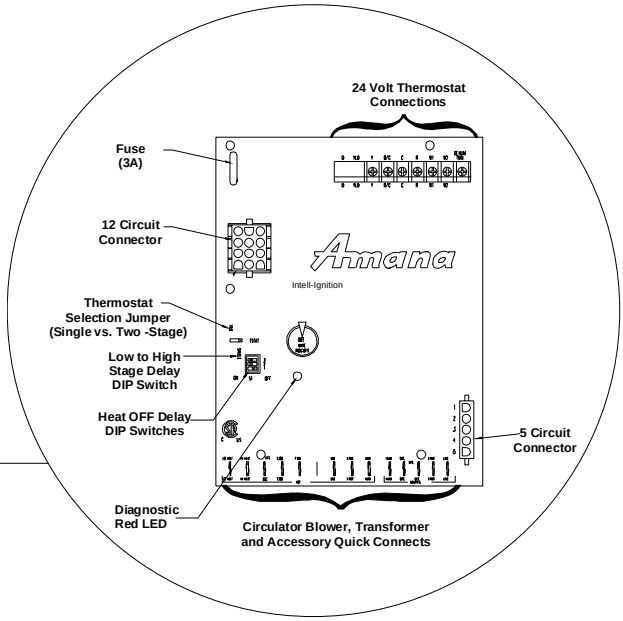
Small	070__35	16-1/2	15	12-3/8	12-5/8
Medium	090__40	20-1/2	19	16-3/8	14-5/8
Large	090__50 115__50	24-1/2	23	20-3/8	18-5/8

All dimensions are in inches.

COMPONENT IDENTIFICATION



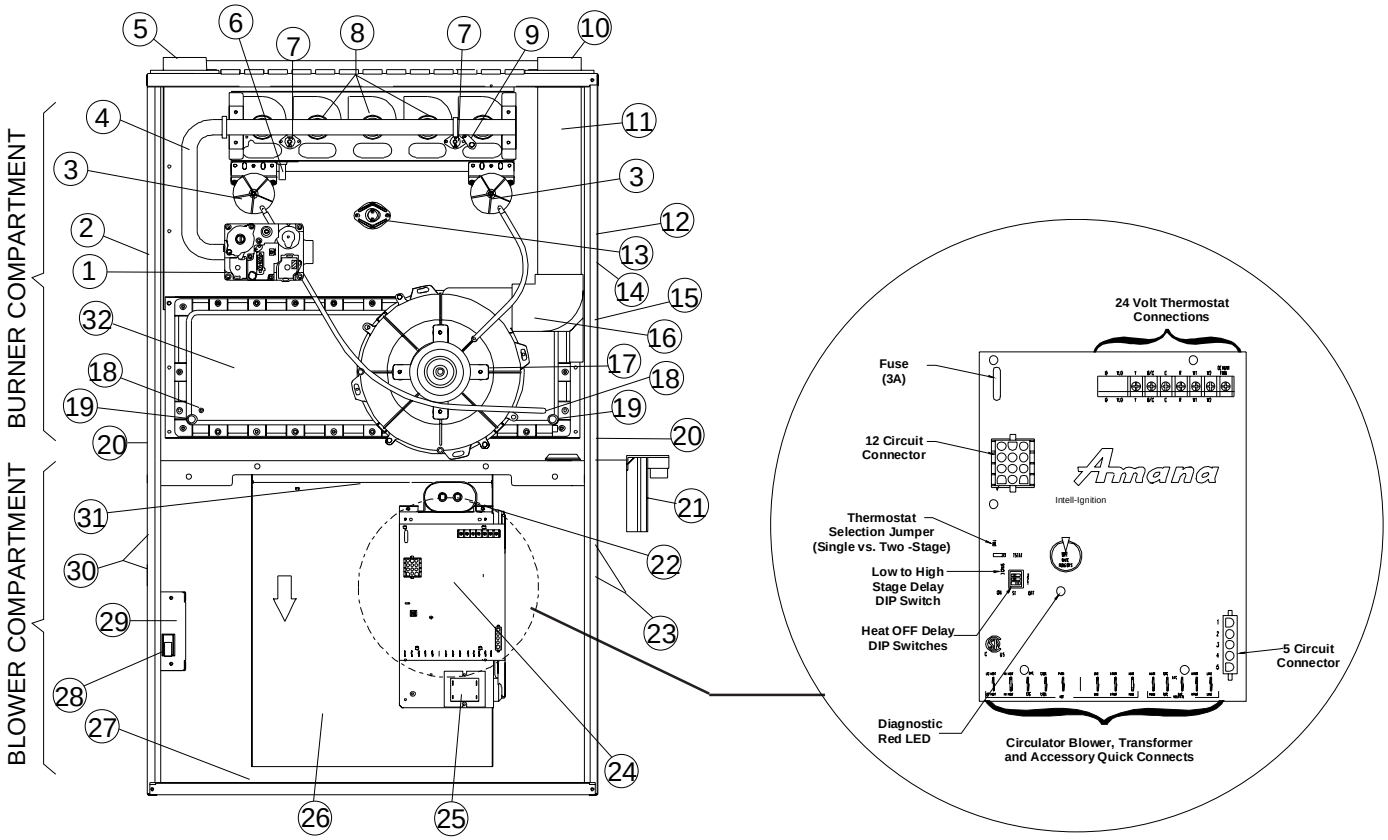
Upflow/Horizontal



Integrated Control Module

1 Two-Stage Gas Valve
2 Gas Line Entrance (Alternate)
3 Pressure Switch(es)
4 Gas Manifold
5 Combustion Air Intake Connection
6 Hot Surface Igniter
7 Rollout Limit
8 Burners
9 Flame Sensor
10 Flue Pipe Connection
11 Flue Pipe
12 Combustion Air Intake (Alternate)
13 Primary Limit
14 Gas Line Entrance
15 Flue Pipe Connection (Alternate)
16 Rubber Elbow
17 Two-Speed Induced Draft Blower
18 Electrical Connection Inlet (Alternate)
19 Coil Front Cover Pressure Tap
20 Coil Front Cover Drain Tap
21 Drain Line Penetrations
22 Drain Trap
23 Blower Door Interlock Switch
24 Capacitor
25 Two-Stage Integrated Control Module (with fuse and diagnostic LED)
26 Transformer (40 VA)
27 Circulator Blower
28 Bottom Return Filter Retainer
29 Auxiliary Limit
30 Junction Box
31 Electrical Connection Inlet
32 Coil Front Cover

COMPONENT IDENTIFICATION



Upflow/Horizontal

Integrated Control Module

1 Two-Stage Gas Valve
2 Gas Line Entrance (Alternate)
3 Pressure Switch(es)
4 Gas Manifold
5 Combustion Air Intake Connection
6 Hot Surface Igniter
7 Rollout Limit
8 Burners
9 Flame Sensor
10 Flue Pipe Connection
11 Flue Pipe (Internal)
12 Combustion Air Intake (Alternate)
13 Primary Limit
14 Gas Line Entrance
15 Flue Pipe Connection (Alternate)
16 Rubber Elbow
17 Two-Speed Induced Draft Blower
18 Coil Front Cover Pressure Tap
19 Coil Front Cover Drain Tap
20 Drain Line Penetrations
21 Drain Trap
22 Capacitor
23 Electrical Connection Inlets (Alternate)
24 Two-Stage Integrated Control Module (with fuse and diagnostic LED)
25 Transformer (40 VA)
26 Circulator Blower
27 Bottom Return Filter Retainer
28 Blower Door Interlock Switch
29 Junction Box
30 Electrical Connection Inlets
31 Auxiliary Limit
32 Coil Front Cover

PRODUCT DESIGN

General Operation

This GUSA furnace is equipped with an electronic ignition device used to light the burners and an induced draft blower to exhaust combustion products.

An interlock switch prevents furnace operation if the blower door is not in place. Keep the blower access door in place except for inspection and maintenance.

This furnace is also equipped with a self-diagnosing electronic control module. In the event a furnace component is not operating properly, the control module LED will flash on and off in a factory-programmed sequence, depending on the problem encountered. This light can be viewed through the observation window in the blower access door. Refer to the *Troubleshooting Chart* for further explanation of the LED codes and *Abnormal Operation - Integrated Ignition Control* section in the Service Instructions for an explanation of the possible problem.

The rated heating capacity of the furnace should be greater than or equal to the total heat loss of the area to be heated. The total heat loss should be calculated by an approved method or in accordance with “ASHRAE Guide” or “Manual J-Load Calculations” published by the Air Conditioning Contractors of America.

*Obtain from: American National Standards Institute 1430 Broadway New York, NY 10018

Location Considerations

- The furnace should be as centralized as is practical with respect to the air distribution system.
- Do not install the furnace directly on carpeting, tile, or combustible material other than wood flooring.
- When suspending the furnace from rafters or joists, use 3/8" threaded rod and 2” x 2” x 3/8” angle as shown in the Installation and Service Instructions. The length of the rod will depend on the application and clearance necessary.
- When installed in a residential garage, the furnace must be positioned so the burners and ignition source are located not less than 18 inches (457 mm) above the floor and protected from physical damage by vehicles.

Notes:

1. Installer must supply one or two PVC pipes: one for combustion air (optional) and one for the flue outlet (required). Vent pipe must be either 2” or 3” in diameter, depending upon furnace input, number of elbows, length of run and installation (1 or 2 pipes). The optional Combustion Air Pipe is dependent on installation/code requirements and must be 2” or 3” diameter PVC.
2. Line voltage wiring can enter through the right or left side of the furnace. Low voltage wiring can enter through the right or left side of furnace.
3. Conversion kits for high altitude natural or propane gas operation are available. See High Altitude Derate chart for details.
4. Installer must supply the following gas line fittings, depending on which entrance is used:

   Left -- Two 90º Elbows, one close nipple, straight pipe.

   Right -- Straight pipe to reach gas valve.

Accessibility Clearances (Minimum)

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS (INCHES)						
POSITION*	**FRONT**	**SIDES**	**REAR**	**TOP**	**FLUE**	**FLOOR**
Upflow	1	0	0	1	0	C
Horizontal	Alcove	6	0	4	0	C

* = All positioning is determined as installed unit is viewed from the front.
C = If placed on combustible floor, floor MUST be wood ONLY.

36" at front is required for servicing or cleaning.

Note: In all cases accessibility clearance shall take precedence over clearances from the enclosure where accessibility clearances are greater. All dimensions are given in inches.

High Altitude Derate

When this furnace is installed at high altitude, the appropriate High Altitude orifice kit must be installed. This is required due to the natural reduction in the density of both the gas fuel and combustion air as altitude increases. The kit will provide the proper design certified input rate within the specified altitude range.

PROPANE AND HIGH ALTITUDE KITS				
MODEL NUMBER	**0 to 7,000 ft.**	**7,001 to 11,000 ft.**	**7,001 to 11,000 ft.**	**7,001 to 11,000 ft.**
GUSA*BX**	LPTK09 Propane Conversion Kit (#55 Orifices)	HANG16 High Altitude Natural Gas Kit (#44 Orifices)	HALP13 High Altitude LP Gas Kit (#56 Orifices)	HAPS30 High Altitude Pressure Switch Kit

High altitude kits are purchased according to the installation altitude and usage of either natural or propane gas. Refer to the chart above for a tabular listing of appropriate altitude ranges and corresponding manufacturer’s high altitude Natural Gas and Propane Gas kits. For a tabular listing of appropriate altitude ranges and corresponding manufacturer's High Altitude Pressure Switch kits, refer to either the *Pressure Switch Trip Points & Usage Chart* in this manual or the *Accessory Charts* in Service Instructions.

PRODUCT DESIGN

PRESSURE SWITCH TRIP POINTS AND USAGE CHART								
MODEL	NEGATIVE PRESSURE ID BLOWER WITH FLUE NOT FIRING TYPICAL SEA LEVEL DATA		NEGATIVE PRESSURE ID BLOWER WITH FLUE FIRING TYPICAL SEA LEVEL DATA		NEGATIVE PRESSURE COIL COVER WITH FLUE NOT FIRING TYPICAL SEA LEVEL DATA		NEGATIVE PRESSURE COIL COVER WITH FLUE FIRING TYPICAL SEA LEVEL DATA	
	LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE
GUSA070BX35 GUSA090BX40 GUSA090BX50 GUSA115BX50	-0.35	-0.70	-0.35	-0.70	-0.55	-0.65	-0.55	-0.65

PRESSURE SWITCH TRIP POINTS AND USAGE CHART															
MODEL	0 to 7,000 ft.								7,001 ft. to 11,000 ft.						
	TRIP POINT COIL COVER PRESSURE SWITCH		COIL COVER PRESSURE SWITCH PART #	TRIP POINT ID BLOWER PRESSURE SWITCH		ID BLOWER PRESSURE SWITCH PART #	PS1 LABEL COLOR	PS2 LABEL COLOR	TRIP POINT COIL COVER PRESSURE SWITCH		TRIP POINT ID BLOWER PRESSURE SWITCH		HIGH ALTITUDE KIT	PS1 LABEL COLOR	PS2 LABEL COLOR
	LOW FIRE	HIGH FIRE		LOW FIRE	HIGH FIRE				LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE			
GUSA070BX35 GUSA090BX40 GUSA090BX50 GUSA115BX50	-0.37	-0.37	20197305	-0.20	-0.55	11177117	GREEN	PURPLE	-0.37	-0.37	-0.15	-0.46	HAPS30 11177119	YELLOW	PINK

Note: All installations above 7,000 ft. require a pressure switch change. For installations in Canada the GUSA furnace is certified only to 4500 feet.
Note: Replacement pressure switch number is listed below high altitude kit number.
Note: All negative pressure readings are in inches of water column (" w.c.).

T.O.D. PRIMARY LIMIT		
PART NUMBER	20162904	20162907
OPEN SETTING (°F)	150	155
COLOR CODE(S)	BROWN	ORANGE
GUSA070BX35		1
GUSA090BX40	1	
GUSA090BX50	1	
GUSA115BX50	1	

ROLLOUT LIMIT SWITCHES			
PART NUMBER	10123533	10123534	10123537
OPEN SETTING (°F)	200	220	190
COLOR CODE(S)	YELLOW	ORANGE	GRAY
GUSA070BX35	2		
GUSA090BX40			2
GUSA090BX50		2	
GUSA115BX50		2	

AUXILIARY LIMIT SWITCHES	
PART NUMBER	10123535
OPEN SETTING (°F)	150
COLOR CODE(S)	RED
GUSA070BX35	1
GUSA090BX40	1
GUSA090BX50	1
GUSA115BX50	1

PRODUCT DESIGN

Coil Matches:

A large array of Amana coils are available for use with the new GUSA furnaces, in either upflow or horizontal applications. These coils are available in both cased and uncased models, with or without a TXV expansion device. These new 90%+ furnaces match up with the existing Amana coils as shown in the chart below.

Btuh Input	Cabinet Width	Air Flow (tons)	CCA_F*C Cased A-Coils	CCA_FSC Uncased A-Coils	CHA_TCC Cased TXV A-Coils	CHA_TSC Uncased TXV A-Coils	CCF_F*C Horiz. A-Coils	CHF_TCC Horiz. A-Coils
GUSA070BX35	16 1/2"	2 - 3 1/2	CCA18FCC CCA24FCC CCA30FCC CCA36FCC CCA42FCC	CCA18FSC CCA24FSC CCA30FSC CCA36FSC CCA42FSC	CHA18TCC CHA24TCC CHA30TCC CHA36TCC	CHA18TSC CHA24TSC CHA30TSC CHA36TSC	CCF24FCC CCF30FCC CCF36FCC	CHF18TCC CHF24TCC CHF30TCC
GUSA090BX40	20 1/2"	2 1/2 - 4	CCA30FDC CCA36FDC CCA42FDC CCA48FCC	CCA48FSC	CHA42TCC	CHA42TSC	CCF24FDC CCF36FDC CCF42FCC CCF48FCC	CHF36TCC CHF42TCC
GUSA090BX50	24 1/2"	3 - 5	CCA36FKC CCA48FDC CCA54FCC CCA57FCC CCA60FCC	CCA54FSC CCA57FSC CCA60FSC	CHA48TCC CHA54TCC CHA57TCC CHA60TCC	CHA48TSC CHA54TSC CHA57TSC CHA60TSC	CCF48FDC CCF60FCC CCF61FCC	CHF48TCC CHF60TCC
GUSA115BX50	24 1/2"	3 - 5						

Coil Matches (for the Amana RSD units using R-410A):

Btuh Input	Cabinet Width	Air Flow (tons)	CA_FCA Cased A-Coils	CF_FCA Horizontal A-Coils
GUSA070BX35	16-1/2"	1-1/2 - 3	CA36FCA	CF30FCA
GUSA090BX40	20-1/2"	2-1/2 - 4	CA42FCA	CF36FCA
GUSA090BX50	24-1/2"	3 - 5	CA48FCA CA57FCA	CF48FCA CF60FCA
GUSA115BX50	24-1/2"	3 - 5		

PRODUCT DESIGN

Thermostats:

The following Amana Thermostats are suggested for use with the GUSA Furnace Models:

Thermostats								
Thermostat	**Man/Auto**	**Programmable**	**Cool**	**Heat**	**Batt. Powered**	**Batt. Bkup***	**Shape**	**Color**
1213411	Man. Changeover	No	1	2	No	No	Rectangular	White
1213407	Man. Changeover	Yes	2	2	No	No	Rectangular	White
1213406*	Man. Or Auto	Yes	2	3	No	Yes	Rectangular	White

*1213406 is the recommended model for the GUSA furnace when used with a heat pump in a fossil fuel application. It is NOT for use with the GUSA as a sole heating source. 1213406 thermstats are 24V powered with battery backup.

Filters:

Filters are required with this furnace and must be provided by the installer. The filters used must comply with UL900 or CAN/ULCS111 standards. Installing this furnace without filters will void the unit warranty.

This furnace has provisions for the installation of return air filters at the side and/or bottom return. The furnace will accommodate the following filter sizes depending on cabinet size:

Side Return(s)		
Cabinet Width (in.)	Nominal Filter Size (in.)	Approx. Flow Area (in^2)
All	16 x 25 x 1	400

Bottom Return		
Cabinet Width (in.)	Nominal Filter Size (in.)	Approx. Flow Area (in^2)
16-1/2	14 x 25 x 1	350
20-1/2	16 x 25 x 1	400
24-1/2	20 x 25 x 1	500

Refer to Minimum Filter Area tables to determine filter area requirement. **NOTE:** Filters can also be installed elsewhere in the duct system such as a central return.

		Cooling Airflow Requirement (CFM)					
		800	**1000**	**1200**	**1400**	**1600**	**2000**
GUSA___BX__ Model (Input__Airflow)	070__35	564*	564*	564*	672	---	---
	090__40	---	752*	752*	752*	768	---
	090__50	---	---	752*	752*	768	960
	115__50	---	---	940*	940*	940*	960

*Minimum filter area dictated by heating airflow requirement.

Disposable Minimum Filter Area (in^2)

[Based on a 300 ft/min filter face velocity]

		Cooling Airflow Requirement (CFM)					
		800	**1000**	**1200**	**1400**	**1600**	**2000**
GUSA___BX__ Model (Input__Airflow)	070__35	282*	282*	282*	336	---	---
	090__40	---	376*	376*	376*	384	---
	090__50	---	---	376*	376*	384	480
	115__50	---	---	470*	470*	470*	480

*Minimum filter area dictated by heating airflow requirement.

Permanent Minimum Filter Area (in^2)

[Based on 600 ft/min filter face velocity]

FURNACE SPECIFICATIONS

MODEL	GUSA070BX35	GUSA090BX40	GUSA090BX50	GUSA115BX50
Btuh Input (US) High Fire	69,000	92,000	92,000	115,000
Output (US) High Fire	65,200	87,300	86,000	109,100
Btuh Input (US) Low Fire	48,000	64,000	64,000	80,000
Output (US) Low Fire	45,200	60,000	59,800	76,100
A.F.U.E.	92.0%	92.0%	92.0%	92.0%
Rated External Static (" w.c.)	.10 - .50	.10 - .50	.10 - .50	.10 - .50
Temperature Rise (°F)	35 - 65	35 - 65	35 - 65	35 - 65
High Stage Pressure Switch Trip Point (" w.c.)	-0.55	-0.55	-0.55	-0.55
Low Stage Pressure Switch Trip Point (" w.c.)	-0.20	-0.20	-0.20	-0.20
Front Cover Pressure Switch Trip Point (" w.c)	-0.37	-0.37	-0.37	-0.37
Blower Wheel (D" x W")	11 x 7	11 x 9	11 x 10	11 x 10
Blower Horsepower	1/2	1/2	3/4	1/2
Blower Speeds	4	4	4	4
Max CFM @ 0.5 E.S.P.	1407	1544	2017	1976
Power Supply	115-60-1	115-60-1	115-60-1	115-60-1
Minimum Circuit Ampacity (MCA)	8.7	6.4	11.1	9.8
Maximum Overcurrent Device	15.0	15.0	15.0	15.0
Transformer (VA)	40	40	40	40
Heat Anticipator (Amps)	0.7	0.7	0.7	0.7
Primary Limit Setting (°F)	155	150	150	150
Auxiliary Limit Setting (°F)	150	150	150	150
Rollout Limit Setting (°F)	200	190	220	220
Fan Delay On Heating	30 secs.	30 secs.	30 secs.	30 secs.
Off Heating *	90 secs.	90 secs.	90 secs.	90 secs.
Fan Delay On Cooling	5 sec.	5 sec.	5 sec.	5 sec.
Off Cooling	45 secs.	45 secs.	45 secs.	45 secs.
Gas Supply Pressure (Natural/Propane) (" w.c.)	7 /11	7 / 11	7 / 11	7 / 11
Manifold Pressure (Natural/Propane) (" w.c.)	3.5 / 10	3.5 / 10	3.5 / 10	3.5 / 10
Orifice Size (Natural/Propane)	#43 / #55	#43 / #55	#43 / #55	#43 / #55
Number of Burners	3	4	4	5
Vent Connector Diameter (inches)	2	2	2	2
Combustion Air Connector Diameter (inches)	2	2	2	2
Shipping Weight (lbs.)	145	167	175	188

* Off Heating - This fan delay timing is adjustable (60, 90, 120 or 180 seconds), 90 seconds as shipped.

1. These furnaces are manufactured for natural gas operation. Optional kits are available for conversion to propane operation.
2. For elevations above 2000 feet the rating should be reduced by 4% for each 1000 feet above sea level. The furnace must not be derated, orifice changes should only be made if necessary for altitude.
3. The total heat loss from the structure as expressed in TOTAL BTU/HR must be calculated by the manufacturers method or in accordance with the "A.S.H.R.A.E. GUIDE" or "MANUAL J-LOAD CALCULATIONS" published by the AIR CONDITIONING CONTRACTORS OF AMERICA. The total heat loss calculated should be equal to or less than the heating capacity. Output based on D.O.E. test procedures, steady state efficiency times output.
4. Minimum Circuit Ampacity calculated as: (1.25 x Circulator Blower Amps) + I.D. Blower Amps.

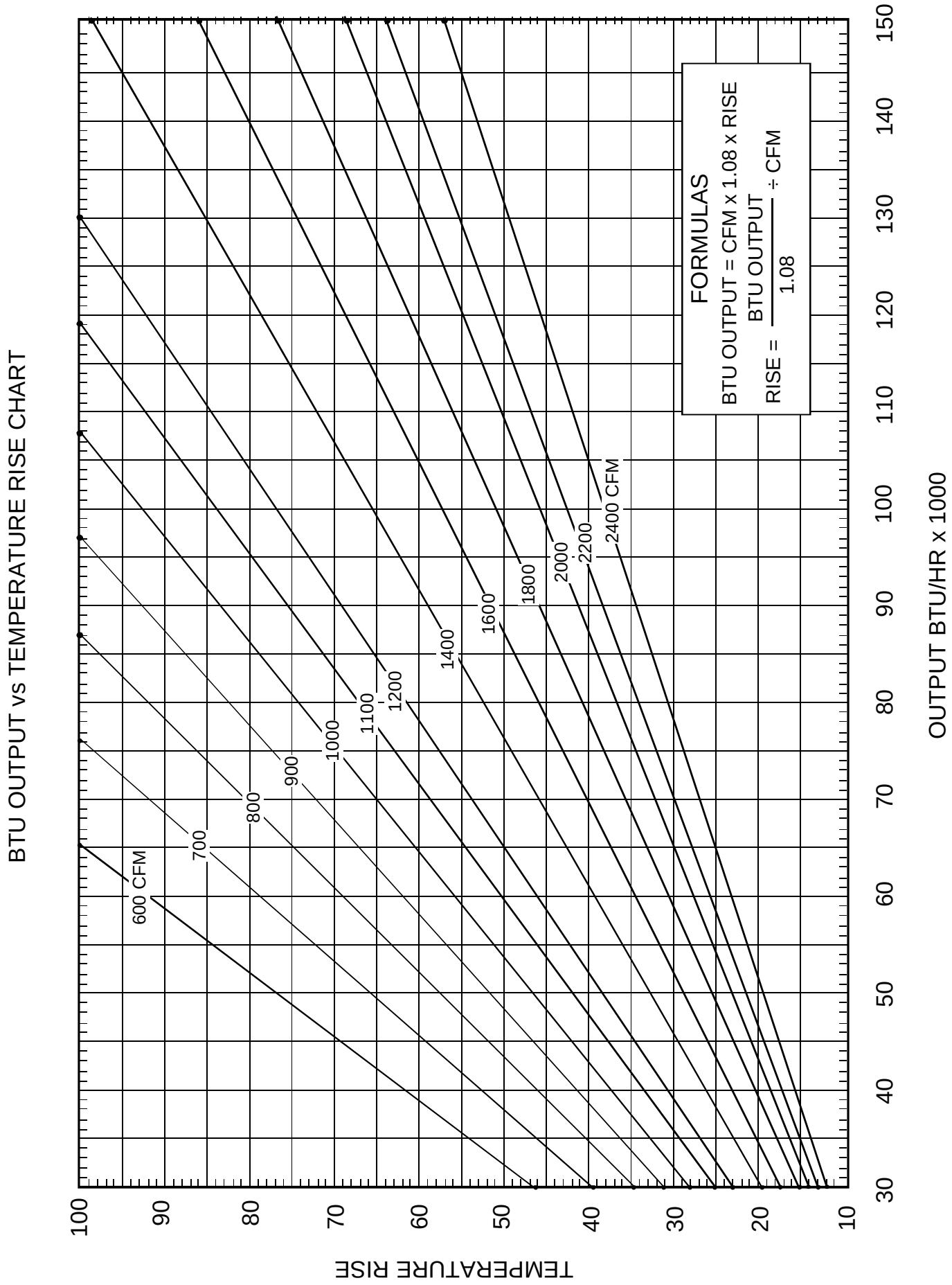
BLOWER PERFORMANCE SPECIFICATIONS

GUSA*BX** Blower Performance**
(CFM & Temperature Rise vs. External Static Pressure)

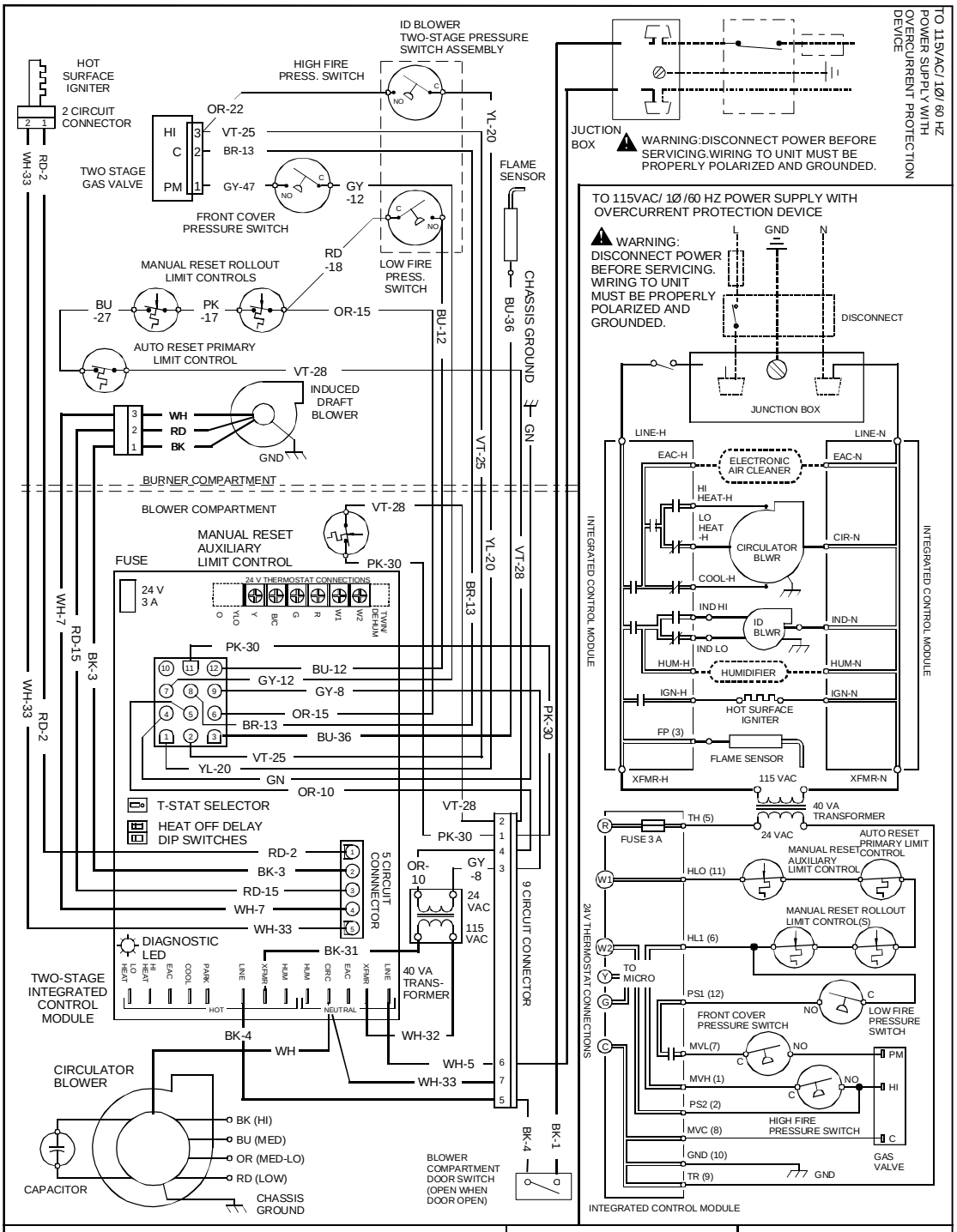
Model (Heating Speed As Shipped)	Motor Speed	Tons AC at 0.5" ESP	External Static Pressure, (Inches Water Column)																	
			0.1			0.2			0.3			0.4			0.5			0.6	0.7	0.8
			CFM	Low Fire Rise	High Fire Rise	CFM	Low Fire Rise	High Fire Rise	CFM	Low Fire Rise	High Fire Rise	CFM	Low Fire Rise	High Fire Rise	CFM	Low Fire Rise	High Fire Rise	CFM	CFM	CFM
	HIGH	3.5	1621	---	37	1572	---	38	1521	---	39	1469	---	40	1407	---	42	1343	1276	1205
GUSA070BX35	MED	3.0	1402	---	42	1366	---	43	1329	---	45	1290	---	46	1243	---	48	1185	1133	1060
(HIGH FIRE: MED-LO	MED-LOW	2.5	1144	36	52	1122	37	53	1086	38	55	1063	39	56	1024	40	58	981	940	875
LOW FIRE: LOW)	LOW	2.0	868	48	---	831	50	---	805	51	---	782	53	---	745	55	---	703	667	619
	HIGH	4.0	1821	30	44	1768	31	45	1699	32	47	1624	34	49	1544	36	51	1439	1354	1227
GUSA090BX40	MED	3.5	1624	34	49	1561	35	51	1520	36	52	1461	38	54	1381	40	57	1297	1217	1109
(HIGH FIRE: MED	MED-LOW	3.0	1395	40	57	1363	40	58	1311	42	60	1258	44	63	1201	46	---	1120	1045	957
LOW FIRE: LOW)	LOW	2.5	1212	45	65	1164	47	---	1126	49	---	1080	51	---	1014	54	---	957	882	815
	HIGH	5.0	2090	---	38	2076	---	38	2061	---	38	2054	---	39	2017	---	39	1963	1901	1820
GUSA090BX50	MED	4.5	1615	---	49	1610	---	49	1600	---	50	1591	---	50	1562	35	51	1523	1473	1410
(HIGH FIRE: MED-LO	MED-LOW	3.5	1367	40	58	1367	40	58	1356	41	58	1351	41	59	1345	41	59	1298	1252	1177
LOW FIRE: LOW)	LOW	3.0	1191	46	---	1182	47	---	1166	47	---	1141	48	---	1115	49	---	1061	1014	965
	HIGH	5.0	2181	---	45	2117	---	47	2073	---	48	2021	---	49	1976	---	50	1913	1831	1746
GUSA115BX50	MED	4.5	1693	41	58	1666	41	59	1647	42	60	1600	43	62	1562	44	63	1522	1471	1408
(HIGH FIRE: MED	MED-LOW	3.5	1489	46	---	1454	47	---	1428	48	---	1397	49	---	1365	50	---	1328	1270	1214
LOW FIRE: LOW)	LOW	3.0	1299	53	---	1275	54	---	1250	55	---	1224	56	---	1188	58	---	1161	1105	1059

1. Blower speeds for each firing rate are set independently of each other.
2. CFM in chart is without filters(s). Filters do not ship with this furnace, but must be provided by the installer. If the furnace requires two return filters, this chart assumes both filters are installed.
3. All furnaces ship as high speed cooling. Installer must adjust blower cooling speed as needed.
4. For most jobs, about 400 CFM per ton when cooling is desirable.
5. INSTALLATION IS TO BE ADJUSTED TO OBTAIN TEMPERATURE RISE WITHIN THE RANGE SPECIFIED ON THE RATING PLATE.
6. The chart is for information only. For satisfactory operation, external static pressure must not exceed value shown on rating plate. The shaded area indicates ranges in excess of maximum external static pressure allowed when heating. The data for 0.6" w.c. to 0.8" w.c. is shown for air conditioning purposes only.
7 The dashed (---) areas indicate a temperature rise not recommended for this model.
8. The above chart is for U.S. furnaces installed at 0-4000 feet. At higher altitudes, a properly derated unit will have approximately the same temperature rise at a particular CFM, while the ESP at that CFM will be lower.

BLOWER PERFORMANCE SPECIFICATIONS



WIRING DIAGRAMS



- 0 STEADY ON = REPLACE CONTROL
- 1 1 FLASH = SYSTEM LOCKOUT (RETRIES/RECYCLES EXCEEDED)
- 2 2 FLASHES = LOW FIRE PRESSURE SWITCH STUCK CLOSED
- 3 3 FLASHES = LOW FIRE PRESSURE SWITCH STUCK OPEN
- 4 4 FLASHES = THERMAL PROTECTIVE DEVICE OPEN
- 6 6 FLASHES = 115 VOLT AC POWER REVERSED
- 7 7 FLASHES = LOW FLAME SENSE SIGNAL
- 8 8 FLASHES = CHECK IGNITER OR IMPROPER GROUNDING
- 9 9 FLASHES = HIGH FIRE PRESSURE SWITCH STUCK OPEN
- C CONTINUOUS FLASHES = UNANTICIPATED FLAME PRESENT

- LOW VOLTAGE (24V)
- LOW VOLTAGE FIELD
- HI VOLTAGE (115V)
- HI VOLTAGE FIELD
- JUNCTION
- TERMINAL
- INTERNAL TO INTEGRATED CONTROL
- PLUG CONNECTION

- EQUIPMENT GND
- FIELD GND
- FIELD SPLICE
- SWITCH (TEMP.)
- IGNITER
- SWITCH (PRESS.)
- OVERCURRENT PROT. DEVICE

COLOR CODES:			
YL	YELLOW	PK	PINK
OR	ORANGE	BR	BROWN
VT	VIOLET	WH	WHITE
GN	GREEN	BU	BLUE
BK	BLACK	GY	GRAY
		RD	RED

20339801 REV.00

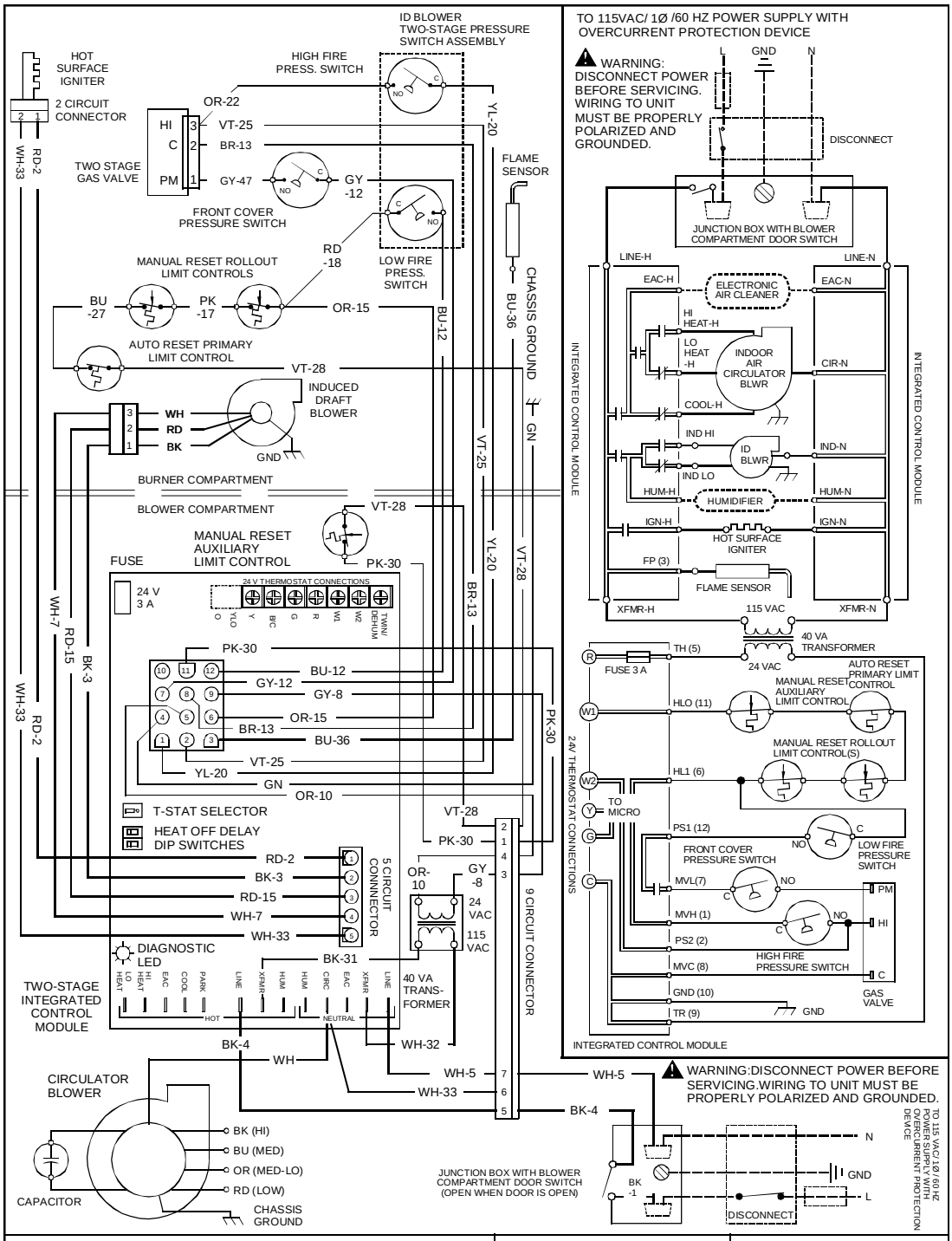
NOTES:
1. SET HEAT ANTICIPATOR ON ROOM THERMOSTAT AT 0.7 AMPS.
2. MANUFACTURER'S SPECIFIED REPLACEMENT PARTS MUST BE USED WHEN SERVICING.
3. IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE FURNACE MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105°C. USE COPPER CONDUCTORS ONLY.
4. UNIT MUST BE PERMANENTLY GROUNDED AND CONFORM TO N.E.C. AND LOCAL CODES.

WARNING

TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.

GUSA___BX__ (Manufacturing Numbers P1239502-06F and P1242002-06F)

WIRING DIAGRAMS



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- LOW VOLTAGE FIELD
- HI VOLTAGE (115V)
- HI VOLTAGE FIELD
- JUNCTION TERMINAL
- INTERNAL TO INTEGRATED CONTROL
- PLUG CONNECTION

- EQUIPMENT GND
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- SWITCH (TEMP.)
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20299701 REV.00

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GUSA___BX__ (Manufacturing Numbers P1233902-06F)

WARNING

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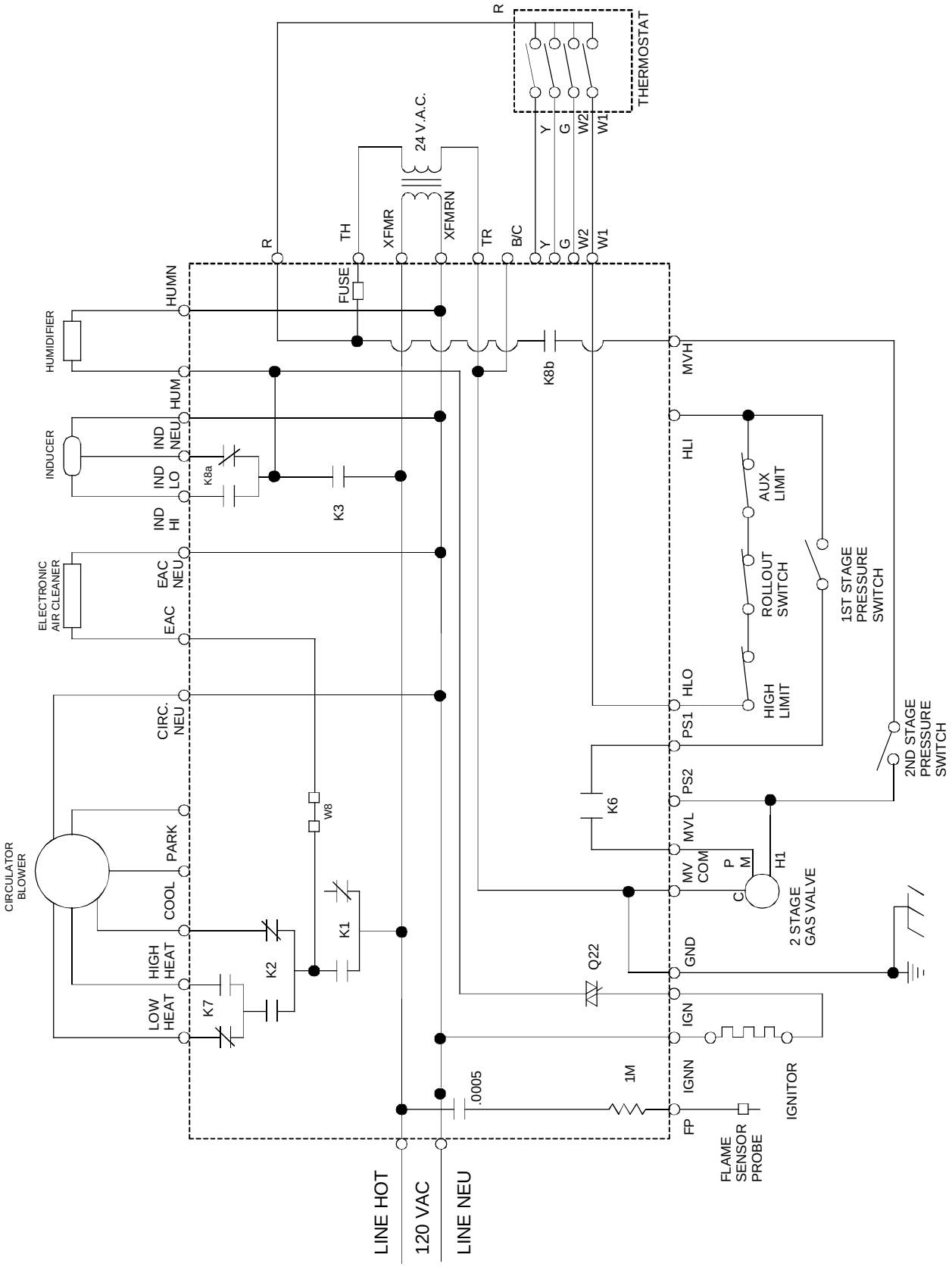
SCHEMATICS



TYPICAL SCHEMATIC
GUSA___BX__ MODEL FURNACES
WR 50M61-288 INTEGRATED IGNITION CONTROL

This schematic is for reference only. Not all wiring is as shown above, refer to the appropriate wiring diagram for the unit being serviced.

WARNING

TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.